

Sequence Stratigraphic Framework and Depositional Variations of Miocene Lowstand Systems Tracts, South Louisiana

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Facies of Miocene lowstand systems tracts comprise a large portion of the remaining exploration potential for deep untested objectives in southwest Louisiana. This complex and highly variable section is contained within 22 major depositional sequences deposited from 21.9 to 7 million years ago; each sequence ranges in duration from 0.5 to 1.5 million years. Regional well-log, seismic, and biostratigraphic correlation and mapping of the sequence stratigraphic framework defines the occurrence and extent of lowstand facies that filled intra-slope basins across south Louisiana's coastal zone.

From oldest to youngest, the sequence encompasses the *Cristellaria R* through *Cristellaria K* biozones. Within onshore and state water areas, 14 sequences contain regionally correlative lowstand systems tract components.

Almagamated, massive turbidite facies of basin floor fan complexes are not recognized within intra-slope basins in association with rapid depositional cycles. Deep-water fan and channeled levee facies of slope fan complexes and deltaic facies of prograding complexes are well-developed throughout the early and middle Miocene section. Late Miocene lowstand deposits are best developed in the off-shore trend.

Syn depositional fault movement and salt withdrawal controlled thickness trends, facies patterns, sandstone content, and the position and trend of the shelf-slope break. Sandstone-rich basin floor fans, slope fans, and prograding deltaic complexes are best developed in intraslope basins where paleobathymetric confinement and accommodation were greatest.